

WHAT IS CLAIMED IS:

1. A method for obtaining polypeptides in a cell-free system by which the reaction mixture is prepared with the use of a cell lysate or cell extract, the parameters of the cell-free system and the mode of synthesis are chosen, the type and parameters of at least one porous barrier are determined, the reaction mixture and the feeding solution are placed in the reaction module, and the synthesis is performed, *wherein* upon the parameters of the process are chosen, the types of the selected components determining the productivity of the synthesis are selected, the upper and lower limits of the range within which the concentrations of the selected components are changed during the synthesis are defined, the additional mixture containing the selected components is formed, the additional mixture is supplied to the reaction mixture or to the feeding solution, the synthesis is performed with changing concentrations of the selected components within the defined ranges while the concentrations of the other components are maintained constant.
- 15 2. The method according to claim 1 *wherein* at least one of the selected components is chosen from the group consisting of Mg²⁺, K⁺, NTP, polyamine or their combination.
3. The method according to claim 2 *wherein* one combination of the selected components includes Mg²⁺ and NTP.
4. The method according to claim 1 *wherein* the mode of synthesis is chosen at least from one mode selected from a group consisting of translation, transcription-translation, transcription or combinations of these modes.
- 20 5. The method according to claim 4 *wherein* depending on the mode of synthesis, NTPs contained in the additional mixture consist of a group of ATP, GTP, UTP and CTP or a group of ATP and GTP.
- 25 6. The method according to claim 1 *wherein* the additional mixture is supplied to the reaction mixture before the synthesis or during the synthesis, or the additional mixture is supplied to a part of the feeding solution before the synthesis or during the synthesis.
7. The method according to claim 6 *wherein* the additional mixture is supplied once, recurrently or continuously during the synthesis.
- 30 8. The method according to claim 1 *wherein* the mode of input of low molecular weight components of the feeding solution to the reaction mixture is selected from a group of continuous exchange modes, a group of continuous flow modes, or a combination of these modes.

9. The method according to claim 1 *wherein* the reaction mixture is prepared using a cell lysate or cell extract obtained from prokaryotic or eukaryotic cells.

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